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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,455	01/28/2004	R. David Morris	ATEX 8784US	3175
1688 7590 07/02/2008 POLSTER, LIEDER, WOODRUFF & LUCCHESI 12412 POWERSCOURT DRIVE SUITE 200 ST. LOUIS, MO 63131-3615				
EXAMINER WEINSTEIN, LEONARD J				
ART UNIT 3746		PAPER NUMBER		
MAIL DATE 07/02/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/766,455

Applicant(s)

MORRIS ET AL.

Examiner

LEONARD J. WEINSTEIN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 7, 9-11, 13 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7, 9-11, 13 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 7, 2008 has been entered.
2. The examiner acknowledges the amendments to claims 1, 4, 9-11, 13 and 16-21.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1, 4, 7, 9-11, 13, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sutton et al. 4,718,827 in view of Park 6,620,050, as evidenced by Raney et al. US 6,769,889. Sutton teaches all the limitations as claimed for a multi-

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stage turbine pump for an automotive vehicle including: **(claims 1 and 11)** a pump having an inlet section 16 through which low pressure fuel is drawn into the pump 10, the inlet section 16 includes an end cap 80 having an open sided recess 150 formed therein, the pump 10 further having a first pump stage 76, which includes an impeller 98 and a port plate 102 in which the impeller 98 is installed, the port plate 102 having an open sided spaced channel 146 which has an internal sidewall 164 formed therein, and the pump 10 also having a second pump stage 72 which includes a casing 104 in which a second impeller 122 is installed, the casing 104 having another open sided recess 148 formed therein and the pump 10 further having an outlet section 30 through which high pressure fuel is discharged from the pump 10, a spring pin 154 extending between the open sided recesses, elements 148 and 150, of the end cap 80 and the casing 104 and extending within the sidewall 164 of the open sided spaced channel 146 of the port plate 102 such that the circular sidewall 164 substantially encapsulates the spring pin 154 wherein the spring pin 154 aligns the inlet section 16 and the first and second pump stages, elements 76 and 72 respectively, such that expansion forces exerted by the spring 154 against the sidewall 164 dissipate to and through the end cap 80 and the port plate 102 (Sutton – col. 5 ll. 6-24); **(claims 4 and 13)** a second spring pin, element 154 shown in figure 2 on a far side of pump element 10 disposed on a side opposite to a first instance of element 154 about axis 13, for aligning the inlet section 16, the first and second pump stages, elements 76 and 72 respectively, and the outlet section 30, and including a second open sided recess 150 formed in each of the end cap 80, and casing 104 and further including a second open sided spaced channel 146 formed in

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the port plate 102 in which the second spring pin 154 is received; **(claim 9)** a spring pin 154 made of a spring material, the springs 154 being compressed when the inserted in the open sided channels 146 of the port plate 102 with the pins thereafter expanding against a sidewall 164 of the open side channels 146 with the force exerted by the pins 154 on the sidewalls 164 maintaining alignment of the inlet section 16 and the first and second pump stages, 76 and 72; **(claim 10)** two spring pins 154, clearly shown twice in figure 2, the open recesses, elements 150 and 148, formed in the end cap 80 and the casing 102 respectively, and the open sided spaced channels 146 formed in the port plate 102 are arranged (or are capable of being arranged) offset in a predetermined angular relationship with each other for proper alignment of the fuel pump 10 components during pump assembly (col. 5 ll. 10-24); **(claim 17)** and an alignment means, as defined by elements 146, 148, 150, and 164, for use in a multistage turbine fuel pump 10 for aligning components comprising respective stages, elements 72 and 76, of the pump 10 the alignment means, as defined by elements 146, 148, 150, and 164, including a spring pin 154 made of a spring material and having an open sided channel, as defined by elements 156 and 160 of element 154, formed therein such that the spring pin 154 when installed in the channel, as defined by elements 156 and 160 of 150, exerts a force on the components to maintain them in alignment (col. 5 ll. 6-24); **(claim 18)** pair of substantially identically formed spring pins 154, as shown in figure 2, the fuel pump 10 components, elements 146, 148, 150, and 164, including respective open sided channels, as formed by element 146, for each pin 154 wherein the open sided channels 146 partially encapsulate each pin 154 (fig. 1); **(claim 19)** a pin 154 is

compressed when inserted in the open sided channel 146 for the pins 154 to thereafter press against a sidewall 164 of the open sided channel 146 in which it is inserted, the force exerted by the pin 154 on the open sided channel sidewall 164 holding the components, elements 72 and 76, in alignment (col. 5 ll. 6-24); **(claim 20)** two spring pins 154 and the open sided channels 146 formed in which the spring pins 154 are received are arranged in a preferred orientation to properly align the components, elements 72 and 76, during pump 10 assembly (col. 5 ll. 10-24); **(claim 21)** and a two stage fuel pump 10 having an inlet end cap 80, a first stage port plate 102 and a second stage casing 104, the inlet end cap 80, port plate 102, and casing 104 each having open sided channels, elements 150, 146, and 148 respectively, formed therein in which the respective spring pins 154 are received, thereby to dissipate forces transferred from the spring pins 154 to these components, elements 72 and 76.

Sutton fails to teach the following limitations that are taught by Park for an alignment means for a motor driven apparatus wherein: **(claim 1 and 11)** a casing, as defined by elements 30 and 40, has an internal circular sidewall 170 in an open sided spaced channel 130, a spring pin 150 extending within a circular sidewall 170; **(claims 7 and 16)** a spring pin 150 has a hollow, cylindrical shape with a longitudinal slot extending the length of the pin 150, clearly shown in figures 4-8; **(claims 9 and 16)** a plurality of pins 150 made of a spring material (Park - col. 3 ll. 35-40), the springs 150 being compressed when inserted in the open sided channel 130 of the with the pins 150 thereafter expanding against each circular sidewall 170 of the open sided channels 130 with the force exerted by the pins 150 on the open sided channel sidewalls 170

maintaining alignment of (Park col. 3 ll. 35-40). It would have been obvious to one having ordinary skill in the art the time the invention was made to modify the structure of an alignment assembly of a fuel pump, as taught by Sutton, to include circular channels capable of receiving cylindrical spring pins, as taught by Park, in order to increase an over strength of a pump assembly and aid in reducing vibration of components during operation (Park – col. 2 ll. 36-43).

The examiner notes that if Sutton were modified to receive a cylindrical spring as taught by Park, the modification would including boring out the channels 150, 146, and 148, into smooth rounded surfaces that could receive the spring pin that is taught by Park. The pins of both Sutton and Park provide a teaching for an apparatus that maintains two or more cylindrical components (port plate 74 and pump stages 102 and 104 of Sutton and pipe 30 and yoke joint 10 of Park) in angular alignment. Raney provides evidence that it was known in the art, at the time the invention was made, to use cylindrical pins 58 for aligning at least one pump stage 12 with port plates (14, 16) on each end.

Sutton discloses the claimed invention except that an aligning a spring pin 154 is flat with clasps at both ends instead of long hollowed cylinder as taught by Park. Park shows that cylindrical spring pins were an equivalent structure known in the art. In order to rely on equivalence as a rationale supporting an obviousness-type rejection, the equivalency must be recognized in the prior art. *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). Further Raney represents evidence that cylindrical pins were art-recognized equivalent structures for pins with clasps at both ends, used to align port

plates and pump stages of a pump. Therefore, because these two pin designs were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a spring pin with clasps at both ends, as taught by Sutton, for the hollowed cylindrical spring pins, as taught by Park. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. *In re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Response to Arguments

3. Applicant's arguments filed April 7, 2008 have been fully considered but they are not persuasive. The examiner has presented new grounds for rejection however feels it important to address the applicant's arguments. With respect to the rejection of claims 1, 4, 7, 9-11, 13, 16-21 as being unpatentable over Sutton US 4,718,827 in view of Park US 6,620,050, the applicant argues that with specific reference to Park, a combination of the references does not disclose a spring pin extending within an open sided channel and/or recesses. The applicant argues that neither Sutton nor Park suggest a reason for the combination presented.

In response to applicant's argument that with respect to the combination of Sutton and Park, the reference of Park does not disclose a spring pin extending within open sided channel and/or recesses, the examiner disagrees. Both Sutton and Park, in the least, teach open sided channels with elements 146 (Sutton) and 130 (Park) respectively. The examiner notes that the channel 130 of Park does become enclosed when an engaging protrusion 140 is inserted into element 30, however 130 can certainly

be considered as having an open side if element 140 is not placed within element 30. The examiner could have also cited element 140 as teaching an open sided channel for receiving a spring pin within element 120. The limitations for the instant application do not restrict or limit the channels or recesses of the cap, port plate, or casing, from being enclosed by an element that is disposed around or within a circular region where the channel and/or recesses are formed. Further the recesses and channels claimed are not required to be on an inner or outer circumference of a cap, port plate, or casing.

In response to applicant's argument that neither Sutton nor Park suggests a reason for the combination presented, the examiner disagrees. Sutton and Park, whether explicitly or inherently, teach two types of pin structures that hold cylindrical sections in alignment with one another. As discussed above a simple modification to Sutton that includes boring out the recesses, 148 and 150, and channel 146, would provide a slot required to insert a pin or a spring pin for alignment. Raney provides evidence that using such pins were known in the art for aligning cylindrical components of a pump with a pump member rotating in a non-expansible chamber. Further the examiner notes that where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (citing KSR v. Teleflex, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Accordingly applicant claims a combination that only unites old elements and the combination of those elements yields predictable results; absent evidence that the

modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d at 1518-19 (BPAI, 2007) (citing KSR, 127 S.Ct. at 1740, 82 USPQ2d at 1396. Accordingly, since the applicant[s] have submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Leonard J Weinstein/
Examiner, Art Unit 3746